

What is claimed is:

1. A buoyant cable assembly comprising:

a longitudinally extending core structure said core structure including as its outer layer portion at least one longitudinal segment, each segment of said at least one segment having an annularly cross-sectioned shape and being made of a molded plastic-based material; and

a covering formed from a heat shrinkable tubing surrounding said core structure to protect said core structure.

2. The cable assembly according to claim 1, which is of special utility as a buoyant cable section for use in a marine environment, wherein:

each annularly cross-sectioned segment made of molded plastic-based material further comprises a part in the form molded a polyurethane-based material which is loaded with buoyancy providing particulates homogeneously distributed therein.

3. The cable assembly according to claim 2, wherein said polyurethane based-material loaded with buoyancy providing particulate comprises a thermosetting polymer curable at room

temperature having which as the particulates therein has a range of about 15 percent to about 20 percent by weight of glass microballoons.

4. The cable assembly according to claim 1, further comprising:

said plastic-based material being polyurethane;

said heat shrinkable tubing is formed from a material
selected from the group consisting of polyolefin and
fluoropolymer; and

a layer of adhesive material is disposed between said core
and said casing to bond said heat shrinkable tubing
with said core structure.

5. A method for manufacturing a cable assembly comprising:

providing a length of heat shrinkable tubing;

inflating said heat shrinkable tubing to expand said tubing
to its dilated condition;

inserting a core structure having a diameter less than the
inner diameter of said tubing in its dilated condition
into the inflated heat shrinkable tubing while the
latter is in its dilated condition; and

shrinking said tubing about said core structure.

6. The method according to claim 5, further comprising applying a layer of adhesive material to said core structure prior to inserting said core structure into said heat shrinkable tubing.

7. The method of claim 6, wherein said applying of the adhesive material to the core structure prior to it being inserted into said heat shrinkable tubing comprises providing the adhesive material in a form of heat meltable tape spirally wrapped around said core with overlap between each successive wrap around the girth of the core structure.

8. The method of claim 7 further comprising:

providing a hot air gun; and

shrinking said shrinkable tubing and melting said adhesive material using hot air generated by said hot air gun.

9. The method of claim 5, wherein:

said inflating the tubing comprises introducing a flow of compressed gaseous medium to one of the opposite ends of the heat shrinkable tubing; and

said inserting the core structure into the heat shrinkable tubing comprises introducing one end of said core structure into the dilated other end of the heat shrinkable tubing and while the compressed gaseous medium is flowed into the tubing moving the core structure to a final position wherein it is substantially encircled by the tubing.

10. The method of claim 9, and:

said core structure at said one end thereof which is the end by which it is introduced into the heat shrinkable tubing having a cable-end grip device;

providing a pull line having one and another ends, said pull line having one of its ends tied to said cable-end grip device, said pull line as it extends from said tied end being threaded through the bore of the heat shrinkable tubing and projecting out of said one end of the tubing and forming a linearly extending purchase portion of the line outside the tube; and

said moving of the core structure while gaseous medium is flowed into the heat shrinkable tubing comprises pulling the purchase portion of the pull line until the core structure is in its final position.

11. The method of claim 5, and

providing a hot air gun; and

shrinking said shrinkable tubing and melting said adhesive material using hot air generated by said hot air gun.

12. A longitudinal cable section assembly of a type having a range of outer diameter between about 0.5 and 0.75 inches and whose length is limited by the size of practical clamshell overmolding apparatus, said cable section assembly comprising:

a core structure;

a casing for adding stiffness to the cable and for preventing damage to said core structure during handling and deployment, said casing surrounding said core structure and being formed from a thermoplastic heat shrinkable tubing;

said core structure being of the type whose outer surface which presents itself to the bore surface of said heat shrinkable tubing is formed of at least one longitudinally extending member made of molded polyurethane-based material; and

a layer of thermoplastic adhesive material between said core and said casing, said adhesive material bonding said core structure with said casing.

13. The cable section assembly of claim 12, wherein said heat shrinkable tubing is formed from a material selected from the group consisting of polyolefin and fluoropolymer.

14. The cable section assembly of claim 12, wherein said thermoplastic heat shrinkable tubing has a predetermined tube wall thickness so chosen to adapt the tubing to exert sufficient constrictive forces upon said adhesive layer to cause the exterior of the assembly to be uniformly formed throughout its length.

15. The cable section assembly of claim 14, wherein said predetermined thickness is about 1/16 th of an inch.

16. The cable section assembly of claim 12, wherein the outer surface of the core and the bore of the heat shrinkable tubing each have concentric cylindrical shapes, and:

said layer of thermoplastic material being in a form of heat meltable tape spirally wrapped around said core structure with overlap between each successive wrap around the core structure's girth.

17. The cable section of claim 16, wherein the heat meltable tape is of a type for which at least its exterior surface has characteristics of not being tacky.

18. The cable assembly of claim 12, further comprising:

said core structure including a central flexible conduit and at least one linearly extending energy transmission medium extending through the conduit; and

said at least one energy transmission medium being selected from the group of transmission media consisting of an electric wire, a microwave coaxial cable, and a fiber optic line.